

NOTES ON THE POTATO TUBER MOTH—  
*Gnorimoschema (Phthorimaea) operculella*  
(Zell) IN NEW JERSEY

During the inspection for the tuber moth in New Jersey the New Jersey Department of Agriculture learned of a dump of condemned, southern potatoes on a farm in Burlington County. Clean up of this dump was postponed in the hope that our northern winter would destroy the infestation by this southern insect.

An inspection was made November 10, 1943, and many moths were on the wing. A few larvæ were present. Many pupæ and prepupæ were found. No infested tubers found. Three nights of freezing to this date. A week later moths were still flying; many pupæ and prepupæ; no larvæ. Seven nights of freezing to this date.

No moths were found on February 10, 1944. Many pupæ in various stages of development but the prepupæ were dead. Pupæ gathered and caged started emergence four days later. Seventy-seven days of freezing weather to date.

Healthy pupæ were collected March 31, 1944 and started to emerge three days later. Many pupæ subjected to prolonged moisture had died and were covered with molds. The major portion of live pupæ was found in the ears and folds of the bag closures. Total days of freezing weather to date, 112. A start was made in burning over the dump with Hauck weed burners.

Burning was half finished April 13 and was completed April 19, 1944. Rains and the wet condition of the pile prevented finishing the burning sooner and in the interval moths had emerged. The farmer had planted potatoes in the field adjoining this potato pile and it was necessary to bury and fumigate the potatoes in the dump. These notes show that the potato tuber moth can survive our winter, under certain conditions.

No attempt was made to correlate moisture and temperature during the period of observation. It is assumed that moisture was at an optimum in the lower layers of the pile, with variation only in the upper layer. The death of the pupæ under the upper strata shows that excessive moisture destroys the insect.

The progressive death of larvæ and prepupæ and the disappearance of the moth leads one to assume that survival was only possible in the pupal stage.—WILLIAM M. BOYD.